

failure of the shrinkage cavity in the ingot to unite in rolling.

(7) *Broken Base* means any break in the base of a rail.

(8) *Detail Fracture* means a progressive fracture originating at or near the surface of the rail head. These fractures should not be confused with transverse fissures, compound fissures, or other defects which have internal origins. Detail fractures may arise from shelly spots, head checks, or flaking.

(9) *Engine Burn Fracture* means a progressive fracture originating in spots where driving wheels have slipped on top of the rail head. In developing downward they frequently resemble the compound or even transverse fissures with which they should not be confused or classified.

(10) *Ordinary Break* means a partial or complete break in which there is no sign of a fissure, and in which none of the other defects described in this paragraph are found.

(11) *Damaged Rail* means any rail broken or injured by wrecks, broken, flat, or unbalanced wheels, slipping, or similar causes.

[47 FR 39403, Sept. 7, 1982]

§ 213.115 Rail end mismatch.

Any mismatch of rails at joints may not be more than that prescribed by the following table:

Class of track	Any mismatch of rails at joints may not be more than the following—	
	On the trend of the rail ends (inch)	On the gage side of the rail ends (inch)
1	1/4	1/4
2	1/4	3/16
3	3/16	3/16
4, 5	1/8	1/8
6	1/8	1/8

§ 213.121 Rail joints.

(a) Each rail joint, insulated joint, and compromise joint must be of the proper design and dimensions for the rail on which it is applied.

(b) If a joint bar on classes 3 through 6 track is cracked, broken, or because of wear allows vertical movement of either rail when all bolts are tight, it must be replaced.

(c) If a joint bar is cracked or broken between the middle two bolt holes it must be replaced.

(d) In the case of conventional jointed track, each rail must be bolted with at least two bolts at each joint in classes 2 through 6 track, and with at least one bolt in class 1 track.

(e) In the case of continuous welded rail track, each rail must be bolted with at least two bolts at each joint.

(f) Each joint bar must be held in position by track bolts tightened to allow the joint bar to firmly support the abutting rail ends and to allow longitudinal movement of the rail in the joint to accommodate expansion and contraction due to temperature variations. When out-of-face, no-slip, joint-to-rail contact exists by design, the requirements of this paragraph do not apply. Those locations are considered to be continuous welded rail track and must meet all the requirements for continuous welded rail track prescribed in this part.

(g) No rail or angle bar having a torch cut or burned bolt hole may be used in classes 3 through 6 track.

§ 213.123 Tie plates.

(a) In classes 3 through 6 track where timber crossties are in use there must be tie plates under the running rails on at least eight of any 10 consecutive ties.

(b) [Reserved]

[36 FR 20336, Oct. 20, 1971, as amended at 47 FR 39404, Sept. 7, 1982]

§ 213.127 Rail fastenings.

Each 39 foot segment of rail shall have a sufficient number of fastenings which, in the determination of a qualified Federal or State track inspector, effectively maintain gage within the limits prescribed in § 213.53(b). The term *qualified State track inspector* as used in this section means a track inspector who meets the qualification requirements of 49 CFR 212.203. (Formerly § 212.75).

[47 FR 39404, Sept. 7, 1982]

§ 213.133 Turnouts and track crossings generally.

(a) In turnouts and track crossings, the fastenings must be intact and